



API Spec Q1 and API602
 Cert. No. 602-078
 API Spec Q1 and API601
 Cert. No. 608-0022
 API Spec Q1 and API601
 Cert. No. 605-6120

UNICON

Control Valves Product



UNICON SYSTEM Co., Ltd.
www.uniconvalve.com

UNICON

Supplies a Diverse Range of precision - manufactured



Standard and severe-service globe valve
Triple - offset butterfly valve
High performance trunnion ball valve
Pressure reducing desuperheater station
Pressure regulator

For Oil & Gas, Petrochemical and Power Industries, Worldwide



Wide Application

Power _ NPP, TPP, CCPP, Co-Gen, DH

Oil & Gas _ Onshore, Offshore, Refinery

Petro chemical _ NCC, Ethylene, BTX, PS, SM, VCM, PVC, LDPE, HDPE

Fine-Chemical _ HCL, H2SO4, NHO3, Acetit Acid, PTA, AN, NH3

Chemical _ Dyes, Cosmetics, Caprolactam

LNG, Pulp & Paper, Steel

Certification & Registration

Manufacturing Applicable Standards

| Technology Innovation Company |



ISO9001 mark from DKAS (Feb, 2008)



CE PED mark from TUV (Feb, 2011)



INNO-BIZ(Technology Innovation Company)



Approval supply vendor by KOSPO, KOWEPO, KOMIPO, EWP, KOSEEP (Feb, 2014)



ISO14001 mark from ICR-IFA (April, 2014)



Korea International Trade Association



Korea Industrial Technology Association



Certificate of Utility Model Registration
(A control valve provided with a hi. Temp. and hi. pressure valve seat)



SIL Mark form TUV (Mar, 2015)



API602(Globe), API608(Ball), API609(Butterfly)





UNICO



V100 Series



V200 Series



V300 Series



V400 Series



D400 Series

Control Valve Service

UNICON Valve has provided world wide class automated process control solutions, such as the highly-reliable UNICON V100/200 series Top/Cage-Guided Globe valve and 3way valve.

Desuperheater Station Service

UNICON Valve has provided world wide class boiler equipment automation process control solutions, such as the highly-reliable UNICON V400/D400 series HP/LP By-pass Desuperheater Station, high performance nozzle spray Valve.

Pressure Reducing & Relief Valve Service

UNICON Valve has provided world wide class automated process Pressure Reducing & Relief Solutions, such as the highly-reliable UNICON V500 series PRV Valve.

Shut-off Valve Service

UNICON Valve has provided world wide class automated process shut-off solutions, such as the highly-reliable UNICON V600/800 series HP Ball & Butterfly Valve.

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Control Valves



V500 Series



V600 Series



V800 Series



A100/200 Series

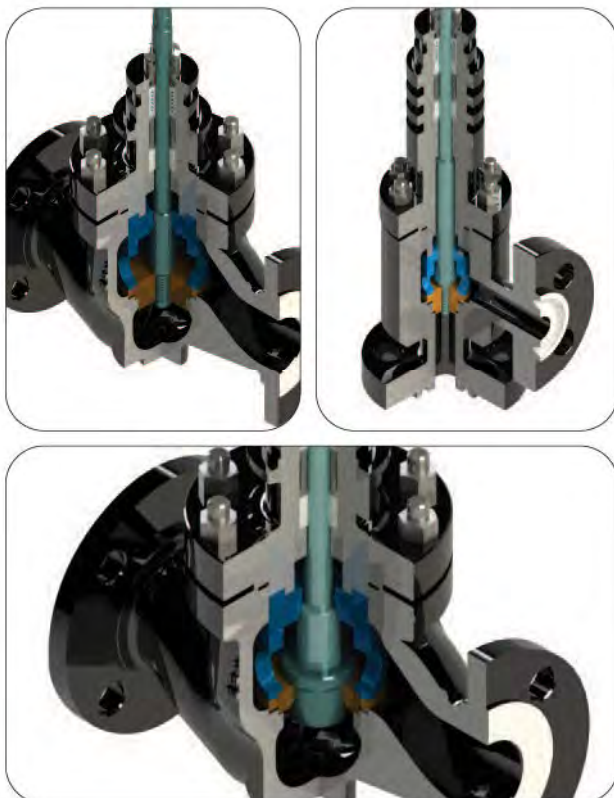


A300 Series



Unbalance Type Globe Control Valve
V100 series

The V100 series single seated valve is developed for wide variety application on liquids, steam and gases. The construction of this range of valves is of a simple form but it has a design which in itself allows specialised applications. The V100 series valve provides reliable performance and cost effectiveness that will surely satisfy your control requirements.



Standard Body Specification

Basic Design Standard : ANSI B16.34

Body Style	Straight way (2way Globe), Angle Type
Bonnet	Plain (Standard) Fin & Extension Bellows Seal Long Extension (Cryogenic Service)
Size Range	1/2" to 6" (DN15...DN150)
Pressure Rating	ANSI 150Lb to 2500Lb JIS 10K to 180K PN20 to PN420
Operating Pressure Range	Up to 4000 psi (g) Up to 280 Kg/cm ² (g)
Operating Temperature Range	-58°F to +1,050°F -50°C to +565°C Option : -320°F to +1,562°F -192°C to +850°C
End Connection	Socket Weld - ANSI B16.11 Butt Weld - ANSI B 16.25 FF/RF/RTJ Flange - ANSI B 16.5 Option JIS Flange, DIN Flange, NPT/PT Screw
Materials	Carbon Steel (WCB, WCC, A105) Chrome-moly Steel (WC6, WC9, C12A, F11, F22, F91) Stainless Steel (CF8, CF8M, CF3, CF3M, F304, F304L, F310, F316L) Duplex Stainless Steel, Monel, Al Bronz, Inconel 625 Hastelloy B/C, Other Alloy
Actuator	Pneumatic Diaphragm Pneumatic Cylinder Electric Motorized Electro-Hydraulic

Performance

- High Flow Capacity.
- Tight Shutoff.
- Stable Operation.
- Excellent flow control rangeability.

Design Flexibility

- Inherently characterized trim offered in equal % linear and quick opening.
- Multi trim sizes available.
- Full range of body and trim material options.
- Full rationalized and interchangeable features.
- Full range of bonnet and packing designs to suit various temperatures and fluids.

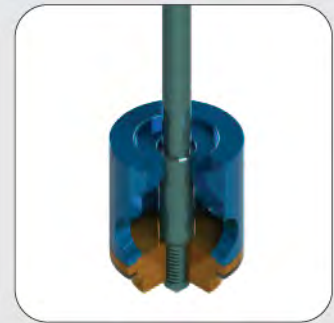
Design Integrity

- Quick changed trim for Easy Maintenance.
- Large diameter stems for stable Operation.
- Heavy duty top guiding with no bottom guide to obstruct seat bore and potentially trap debris.

Standard Trim Specification

Unbalanced Plug Type Quick Changed Trim

Size Range	1/8" to 6" (3mm... 150mm)
Trim Style	P-Port (Parabolic Contoured Plug) Micro Flow Split Plug Multi-Step (Cascade) Cage Window Low-Noise Drilled Hole Cage (1/2/3-Stage) Anti-Cavitation Channel Cage (1/2/3-Stage) Labyrinth Disk Stack Hybrid Trim (Dick Stac + Drill Hole Cage)
Plug Guide Method	Top Guide Cage Guide
Flow Direction	Gas, Steam : Flow to Open Liquid : Flow to Close
Cv Range	0.002 to 400
Flow Characteristic	Linear, Equal %, Modified Equal %, Quick Open
Seat Leakage	FCI-70.2 Standard : ANSI Class IV Option : ANSI Class V ANSI Class VI (Soft Seat) MSS-SP61 (On-Off)
Materials	316 SS, 316 SS + Stellite #6 Hardend 410 SS/440C SS 17-4PH, F22 (Nitride treatment), F51 Inconel 718, XM19 Solid Tungsten Carbided Etc..





Balance Type Globe Control Valve
V200 series

The V200 series cage-guided valve is specially designed using the most recent refinements in control valve technology. It is used to control a wide variety of relatively clean liquids and gases at high-pressure differentials. The design of the V200 series valve has a quick change design so it guarantees convenient repair and easy replacement of trim.



Standard Body Specification

Basic Design Standard : ANSI B16.34

Body Style	Straight way (2Way Globe)
Bonnet	Plain (Standard), Fin & Extension, Bellows Seal Long Extension (Cryogenic Service)
Size Range	1 1/2" to 32" (DN40... DN800)
Pressure Rating	ANSI 150Lb TO 4500Lb JIS 10K to 180K PN20 to PN420
Operating Pressure Range	Up to 4000 psi (g) Up to 280 Kg/cm ² (g)
Operating Temperature Range	-58 °F to +1,050 °F -50°C to +565°C Option : -320°F to +1,562°F, -192°C to +850°C
End Connection	Socket Weld - ANSI B16.11 Butt Weld - ANSI B 16.25 FF/RF/RTJ Flange - ANSI B 16.5 Option : JIS Flange, DIN Flange, NPT/PT Screw
Materials	Carbon Steel (WCB, WCC, A105) Chrome-moly Steel (WC6, WC9, C12A, F11, F22, F91) Stainless Steel (CF8, CF8M, CF3, CF3M, F304, F304L, F310, F316L) Duplex Stainless Steel, Monel, Al Bronz, Inconel 625 Hastelloy B/C, Other Alloy
Actuator	Pneumatic Diaphragm Pneumatic Cylinder Electric Motorized Electro-Hydraulic

Performance

- High Flow Capacity.
- Tight Shutoff.
- Stable Operation.
- Excellent flow control rangeability.

Design Flexibility

- A Simple cage change is all that is required to change between reduced and full-sized trims or between linear and equal % characteristics.
- Large variation of trim designs from single stage cage to multiple stage low noise/anti-cavitation trim designs.
- Full range of body and trim material options.
- Full rationalized and interchangeable features.
- Full range of bonnet and packing designs to suit various temperatures and fluids.

Design Integrity

- Quick changed trim for Easy Maintenance.
- Large diameter stems for stable Operation
- Heavy duty top guiding with no bottom guide to obstruct seat bore and potentially trap debris.
- cage-guided construction reduces plug vibration and provides stable performance throughout travel.

Standard Trim Specification

Balanced Plug Type Quick Changed Trim

Size Range	1 1/2" to 32" (40mm... 800mm)
Trim Style	P-Port (Parabolic Contoured Plug) Cage Window Low-Noise Drilled Hole Cage (1/2/3-Stage) Anti-Cavitation Channel Cage (1/2/3-Stage) Labyrinth Disk Stack Hybrid Trim (Dick Stac + Dril Hole Cage)
Plug Guide Method	Cage Guide
Flow Direction	Gas, Steam : Flow to Open Liquid : Flow to Close
Cv Range	12 to 6800
Flow Characteristic	Liner, Equal %, Modified Equal %, Quick Open
Seat Leakage	FCI-70.2 Standard : ANSI Class IV Option : ANSI Class V ANSI Class VI (Soft Seat) MSS-SP61 (On-Off)
Materials	316 SS, 316 SS + Stellite #6 Hardend 410 SS/440C SS 17-4PH, F22 (Nitride treatment), F51 Inconel 718, XM19 Solid Tungsten Carbided Etc..
Balance Seal	O-Ring (EPDM, Viton) +5°C to +80°C U Seal (RTFE + 316SS) -194°C to +230°C Graph - Lock Seal (Graphite + Inconel) Up to +580°C



P-Port Cage Design



Window Cage Design



Multi Hole Stage Design





Three Way Globe Control Valves

V300 series

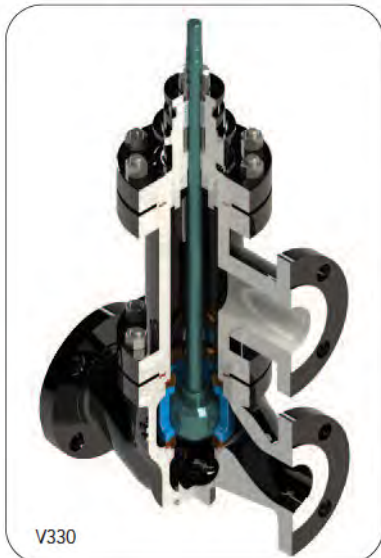


The V300 Series valve is a three-way design of valve for use on blending two separate flows, by having two inlets and a common outlet port, or dividing a flow into two proportional parts by having one common inlet and two outlet ports.

This range of valves has been designed in three forms designated V310, V320 and V330, the V310 and V330 conventional type is to provide an economic solution for all mixing and selected diverting services. V320 balanced trim is specially designed for high duty diverting service applications.

Standard Specification

V310 / V330 Series Mixing & Diverting 3Way Valve



	V310 Series	V330 Series
Body Style	Bottom Flanged 3Way	Top Flanged 3Way
Bonnet	Plain (Built in)	Plain (Standard), Fin & Extension, Bellows Seal
Size Range	Mixing 1" to 12" (DN25-DN300) Diverting 1" to 4" (DN25-DN100)	
Pressure Rating	ANSI 150Lb to 300Lb (JIS 10K to 20K)	
Oper. Press. Range	Up to 300 psi (g) (20 Kg/cm ² (g))	
Oper. Temp. Range	-58°F to +1,050°F (-50°C to +565°C)	
End Connection	Socket Weld - ANSI B 16.11, Butt Weld - ANSI B 16.25 FF/RF/RTJ Flange - ANSI B 16.5, Option : JIS Flange, DIN Flange	
Materials	Carbon Steel (WCB, WCC), Chrome-moly Steel (WC6, WC9) Stainless Steel (CF8, CF8M, CF3, CF3M), Hastelloy B/C, Other Alloy	
Actuator	Pneumatic Diaphragm, Pneumatic Cylinder, Electric Motorized, Electro-Hydraulic	
Trim Style	V-Port, Window Cage, Drilled Hole Cage	
Plug Guide Method	Cage Guide	
Cv Range	Up to 1800	
Flow Characteristic	Liner, Equal %, Modified Equal %, Quick Open	
Seat Leakage	FCI - 70.2, Standard: ANSI Class IV, Option : ANSI Class V, VI (Soft Seat), MSS-SP61	
Materials	316 SS, 316 SS + Stellite #6, Hardend 410 SS / 440 C SS 17-4PH, F22 (Nitride treatment), F51	

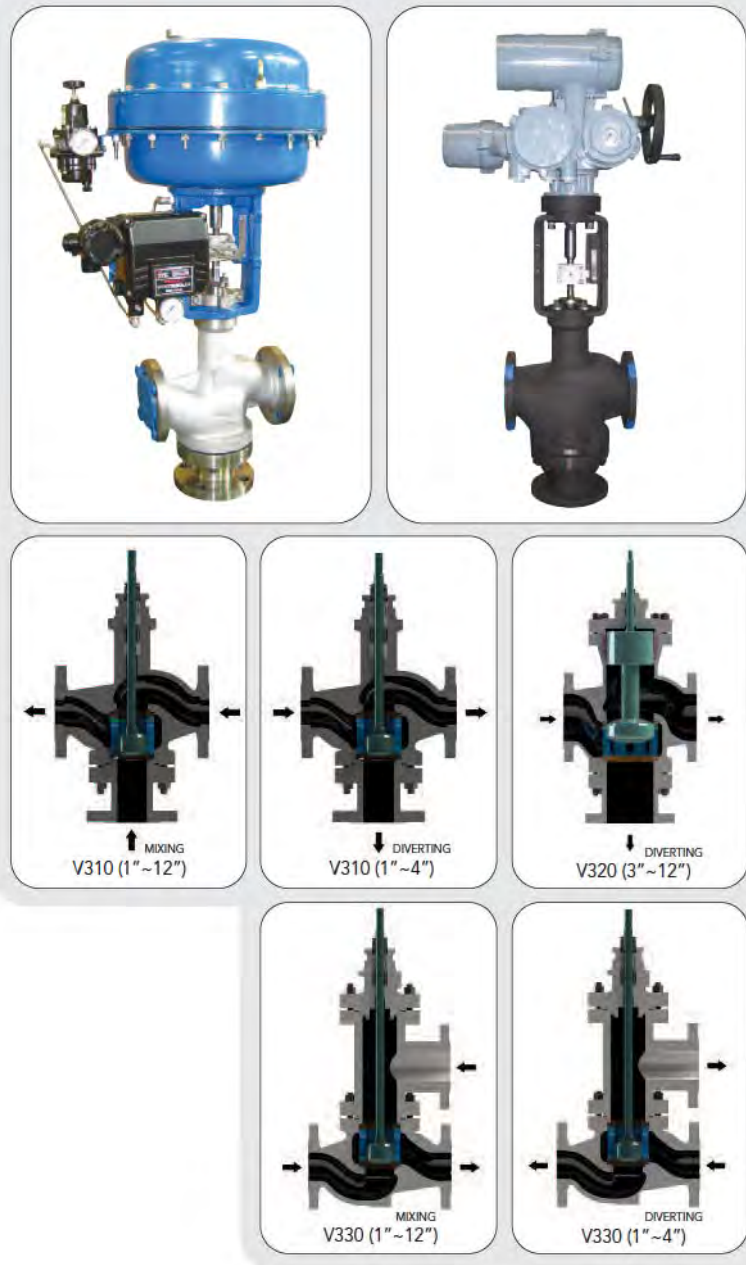
Features

- **High capacity**
Broad and streamlined fluid passage can pass larger amount of fluid than other three-way valves of the same size.
- **Stable Operation**
Port and cage guiding makes the operation of the plug stable regardless of plug travel.
- **Durability**
Rugged structure and smooth operation guarantee a long maintenance - free service life.

Flexibility

Various body and trim types provide design versatility for your needs.

- **V310 Series**
This configuration features an unbalanced plug for simple maintenance and economical installation. Designed with two side and one bottom pipeline connections.
- **V320 Series**
This configuration uses a balanced plug design, to minimize the actuator forces and provide stable control in large valve sizes, with pneumatic actuators. The quick change trim with the plug accessible from the bonnet allows for easy maintenance. Designed with two side and one bottom pipeline connections.
- **V330 Series**
This design combines an unbalanced plug with a Top-Entry Quick Change Trim. Designed with two side and one top side pipeline connections.



V320

Standard Specification

V320 Series Balanced Plug Type Diverting 3Way Valve

V320 Series	
Body Style	bottom Flanged 3Way
Bonnet	Plain (Standard), Fin & Extension, Bellows Seal
Size Range	3" to 20" (DN80_DN500)
Pressure Rating	ANSI 150Lb to 600Lb (JIS 10K to 40K)
Oper. Press. Range	Up to 900 psi (g) (63 Kg/cm ² (g))
Oper. Temp. Range	-58 F to +1,050 F (-50°C to +565°C)
End Connection	Socket Weld - ANSI B 16.11, Butt Weld - ANSI B 16.25 FF/RF/RTJ Flange - ANSI B 16.5, Option : JIS Flange, DIN Flange
Materials	Carbon Steel (WCB, WCC), Chrome-moly Steel (WC6, WC9) Stainless Steel (CF8, CF8M, CF3, CF3M), Hastelloy B/C, Other Alloy
Actuator	Pneumatic Diaphragm, Pneumatic Cylinder Electric Motorized, Electro-Hydraulic
Trim Style	Window Cage, Drilled Hole Cage
Plug Guide Method	Cage Guide
Cv Range	Up to 1500
Flow Characteristic	Liner, Equal %, Modified Equal %, Quick Open
Seat Leakage	FCI - 70.2, Standard : ANSI Class IV Option : ANSI Class V, VI (Soft Seat), MSS-SP61
Materials	316 SS, 316 SS + Stellite #6, Hardend 410 SS / 440 C SS 17-4PH, F22 (Nitride treatment), F51



Pressure Reducing Desuperheater Station

V400 series

Employing patented fluid flow conditioning technology and a unique nozzle arrangement, UNICON's new and improved desuperheater station products easily meet today's most challenging steam conditioning applications.



Standard Specification

Straight way & Angle body Cage Guided style

Size	2" to 24" (DN50... DN600)
Rating	ANSI 150Lb to 2500Lb JIS 10K to 63K PN10 to PN450
Leakage	FCI 70-2 Standard : ANSI Class IV Option : ANSI Class V
Cv Range	70 to 4,560
Press. Range	up to 6,170 psi(g) up to 434kgf/cm ²
Temp. Range	upto +1,050°F upto +565°C
Materials	Carbon steel(WCB,WCC), Stainless steel(CF8,CF8M,CF3,CF3M) Chrome-moly(WC6,WC9,C12A) other alloys
End Connections	RF/FF/RTJ Flanged, Butt weld
Actuators	Spring-diaphragm, Cylinder, Motorized, Electro-Hydraulic
Applications	Auxiliary Steam Turbinebypass(HP/LP)

Performance

- High Integrity design.
- Streamlined flow passages to optimise capacity.
- Excellent flow control rangeability.
- High levels of energy conversion capability.

Design Flexibility

- Modular construction design available with a range of different end connections styles.
- Wide range of supplementary noise control options.
- All trim components removable from the top for ease of maintenance.
- Multiple trim sizes available.

Advantages

- **Close control of pressure and temperature**
Flexible plant systematization will save energy
Good conditioned steam reduces cost in control system.
- **Piping arrangement simplified**
Reduces components and eventually overall cost.
Shortens pipeline enabling easy piping arrangement.
Eliminates auxiliary steam line saving energy.
- **Easy maintenance**
Fewer components reduce maintenance cost.
Almost wear-free valve seat/plug extend maintenance interval.
- **Environment improved**
Noise generated may be attenuated to offer quiet environment.
Valve vibration is eliminated to assure safe operation.





Nozzle Spray Desuperheater Station

D400 series

The UNICON Pipeline Desuperheater Systems provide a convenient method of reducing superheated steam or other vapours to temperatures approaching saturation. The super heated fluid passes through a section of pipe into which the D400 series nozzle protrudes into the flow path. The nozzle introduces coolant flow in the same direction as the super heated fluid.



Standard Specification

Straight way & Angle body Cage Guided style

	D410S	D410M	D420
Turndown Ratio	25 : 1	25 : 1	5 : 1
Type of Atomizing	Velocity	Velocity	Mechanical
Minimum Outlet Temperature	Sat. + 6°C	Sat. + 6°C	Sat. ±8°C
Mounting Orientation	Horizontal	Horizontal	Horizontal
ANSI Pressure Class	Max. 600Lbs	Max. 2500Lbs	Max. 2500Lbs
Main Header Size	6" ~ 36"	6" ~ 36"	1" ~ 4"
Ste.End Connections	Flanged or Welding	Flanged or Welding	Flanged or Welding
Velocity Limits	8~100m/sec~	8~100m/sec	up to 12~100m/sec
Pressure Drop	3 psi nominal	3 ~ 5 psi nominal	Negligible
Required Coolant Pressure Steam Line Pressure	Min. 5barG	Min 5barG	Min.5barG
Distance to Temperature Sensor (DTS)	12 m	12 m	12 m
Min. Straight Pipe Distance (Upstream)	7 m	7 m	7m

Performance

- High efficiency atomization.
- High rangeability variable area spray unit.
- Accurate and repeatable control of fluid temperature to within 6C deg providing appropriate installation and instrumentation are used.
- High spray water pressure capability.

Design

- Wide variation of design options.
- Wide range of available nozzle sizes.
- Erosion resistant materials of construction.
- Minimum number of components.
- Ease of installation.
- Low maintenance featured.
- Fully rationalized.
- Wide range of actuating mechanism available.
- Excellent swired discharge nozzle.

Technical Data

Section of equipment the selection of optimum equipment and appropriate piping plan are necessary for realization of excellent temperature control. Direction for the selection of equipment and precautions for the piping plan are given in the following paragraph.

1. Desuperheater when selecting a desuperheater, it is necessary to know the type of equipment for which the desuperheated steam is used. Particularly, it is important to know the operation conditions such as the range or load fluctuation of the downstream equipment and the allowable range of drain.

It is also necessary to predict the cooling water condition, auxiliary steam condition, and the transient conditions at start and stop of the plant. Thus, when designing a new plant, the planner is required to make delicate considerations on the design of the desuperheater. It is desirable that the selection of the desuperheater and the composition of the control loop be determined through detailed discussion with the maker.

2. Control range required for the valve

In order to achieve a stable temperature control, the plan must be worked out so that the cooling water control valve can be smoothly operated over the entire range of load. The valve is required not only to control the cooling water needed during high load operation but also to sufficiently control the minimum volume of water during low load operation which is calculated through the enthalpy method. Generally, the steam temperature at the inlet of desuperheater tends to decrease with decrease in load, and the turn-down ratio required for the cooling water control valve (ratio of minimum controllable value C_v and maximum value C_v) is considerably greater than the turn-down ration of desuperheater.



D410S Variable Spray Nozzle



D410M Multiple Variable Spray Nozzle



D420 Venturi Nozzle



D410SM Multiple Variable Spray Nozzle



Pilot Type Tank Blanket Valve

V510 series

The blanket gas regulator is one of the principal components typically installed on a storage tank to protect the tank and its contents. It is a precision regulator that is capable of maintaining a very low gas pressure (min. 0.005 BarG) in the tank by controlling the flow of a high pressure (Max. 13 BarG) blanketing gas. It maintains a positive pressure in the tank when fluid is pumped out or as fluid temperature decreases.

Typically nitrogen or another compatible gas is used to suppress the tank product vapors. This reduces losses due to product evaporation and prevents atmospheric contaminants, including moisture, from entering the tank, preventing tank corrosion and product contamination.

V510 Valve is self-contained, fully balanced, pilot-operated, and are used for accurate pressure control in tank blanketing systems.



Standard Specification

Straight way (2Way Globe) / Angle - Option

Size	1/2" to 14" (DN15... DN350)
Rating	ANSI 150Lb to 300Lb
End Connections	Screwed(NPT) FF/RF Flange - ANSI B 16.5 Option : JIS Flange, DIN Flange
Set Pressure Sensing Connection	External - 1/2" NPT(Standard)
Construction Materials	Body : Stainless Steel(CF8, CF8M, CF3M) Trim : Stainless Steel(316 SS) Actuator : Stainless Steel(304 SS, 316 SS) Spring : Spring Steel Diaphragm : PTFE Tubing : 316L SS(904L - Option)
Cv Range	0.5 to 55
Main valve Flow Characteristic	Linear or EQ %
Maximum Operating Pressure	Inlet : 200 PsiG(13.8 BarG) Outlet : 1.5 PsiG(0.1 BarG)
Outlet Set Pressure Range	5 mbar to 1.5 PsiG(0.005 to 0.1 BarG)
Differential Operating Pressure	Minimum : 30 PsiG(2 BarG) Maximum : 200 PsiG(13.8 BarG)
Operating Temperature Range	-20°F to 212°F (-29°C to 100°C)

Application

- Refineries
- Chemical & Petrochemical Plants
- Liquid Bulk Storage Terminals
- Plup & Paper Plants
- Food & Beverage Storage

Features

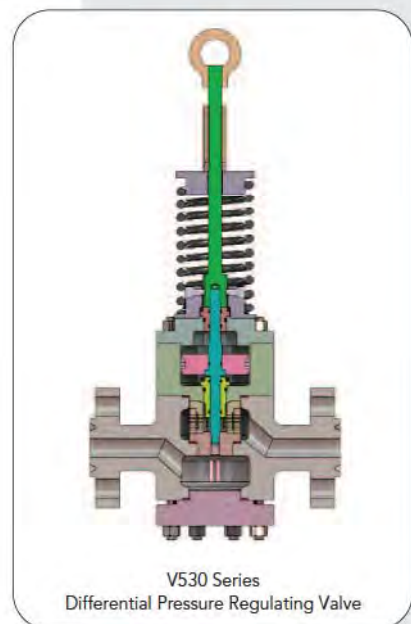
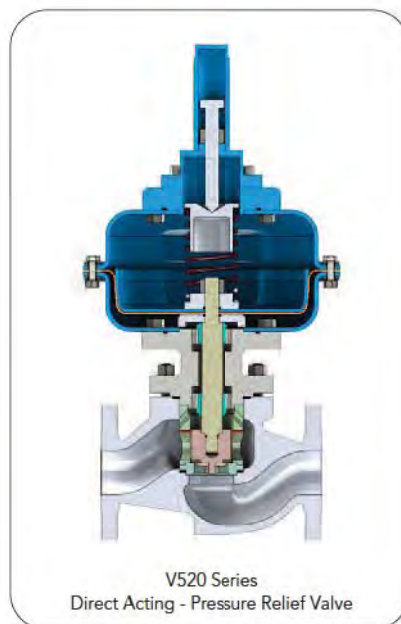
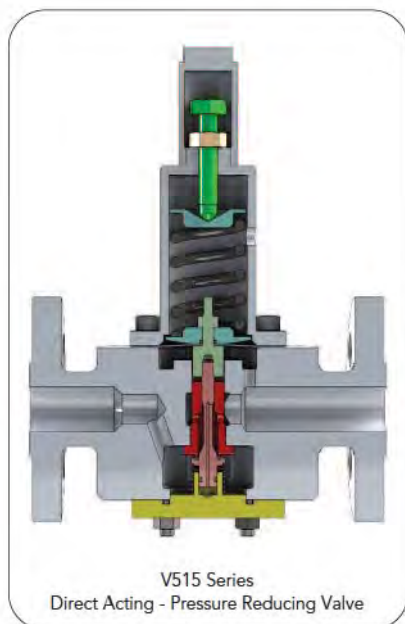
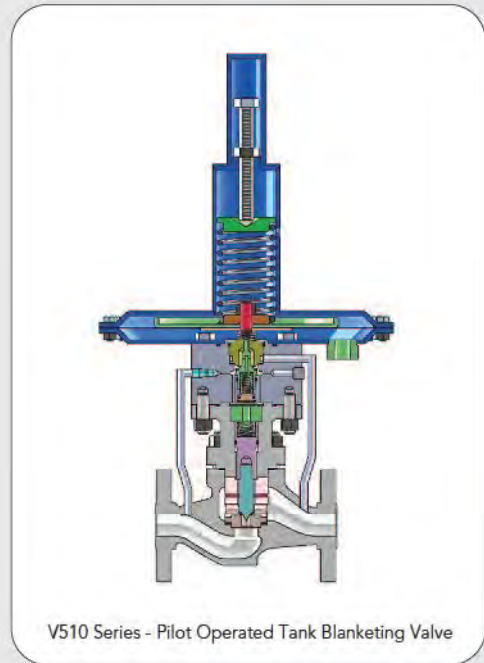
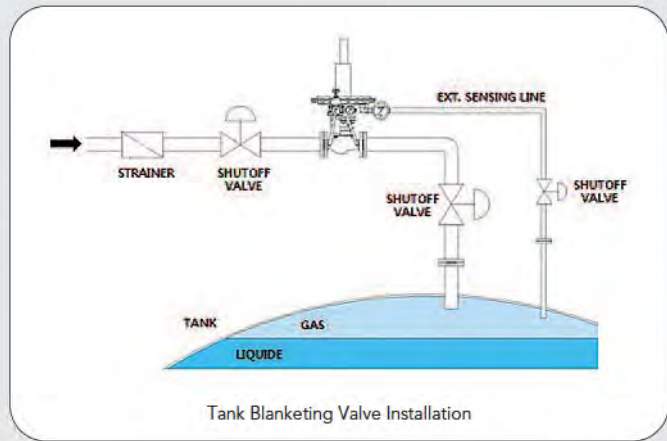
- Fully Balanced Pilot operated design
- Pilot Controlled
- Self - Contained
- Highly Sensitive
- Fully field serviceable

Performance

- Very tight operating band
- Bubble Tight Shutoff
- Quick Changed Tirm for Easy Maintenance
- Set pressure is field adjustable

Design Flexibility

- Angled or In-Line Body Option
- Optional flow plugs to meet specific flow requirements
- System purge and field test capability available





Triple - Offset Butterfly Valves
V600 series

The V600 series triple-offset butterfly valve high-performance in a rotary valve package. Its patented seating concept and adjustable travel actuator reduces dynamic unbalanced forces and permits seven flow rate adjustments.



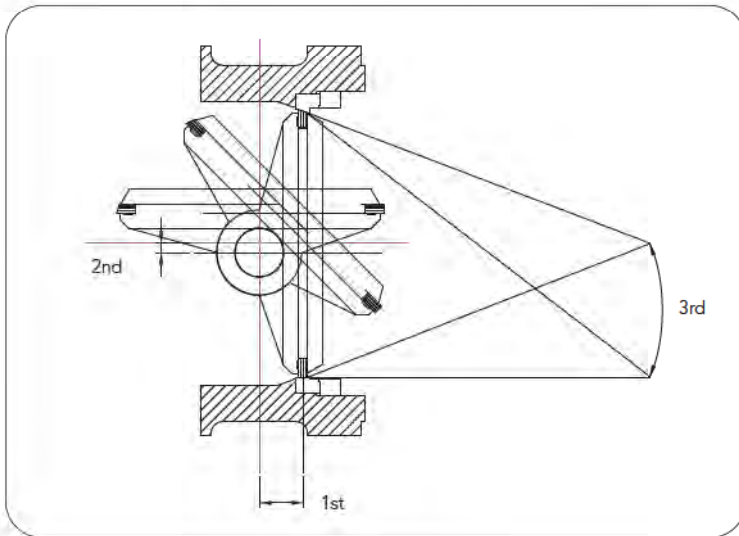
Standard Specification

Triple Offset Butterfly Style

Size	6" to 44" (DN15... DN1100)
Rating	ANSI 150Lb to 1500Lb
Leakage	FCI 70-2 Standard : ANSI Class(Metal Seat) V Option : ANSI Class VI
Cv Range	130 to 80,000
Press. Range	up to 3,400 psi(g) up to 200 kgf/cm ²
Temp. Range	-150°F to +1,050°F -100°C to +565°C Option : -320°F to +1,562°F -196°C to +850°C
Materials	Carbon steel(WCB,WCC), Stainless steel(CF8,CF8M,CF3,CF3M) Chrome-moly(WC6,WC9,C12A) other alloys
End Connections	Wafer Flange less, Luged, Double Flange
Actuators	Spring-diaphragm, Cylinder, Motorized, Electro-Hydraulic
Applications	Fuel gas control, Low Pressure Steam & Water, General Services, Flash Tank, Condensate Recirculation, Auxiliary Steam, Deaerator Pegging Steam

Feature

- **No - Friction**
The triple offset eliminates all friction throughout the operating cycle. And a vastly extended valve life.
- **No - Over travel**
The triple offset is the geometry design of the angle cone disc sealing components. Contact is only made at the final point of closure with the 90 degrees acting as a mechanical stop : resulting in over travel of the disc set.
- **Wide range**
Non gelling design enable a wide variety of material options and wide range of application from the low to high temperature & pressure.
- **Zero - Leakage**
Metal to metal sealing allowing for higher pressure and temperature applications whilst still providing tight shut off.
- **Ease - Maintenance**
Field replaceable seat and seal ring reduces maintenance costs.



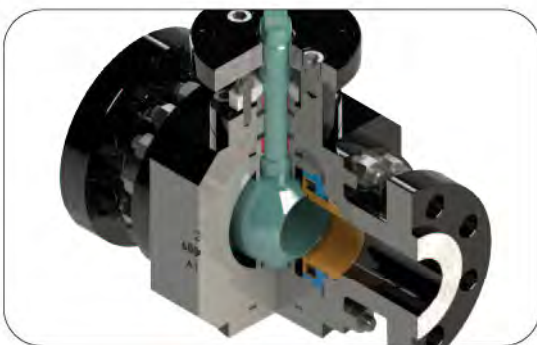
Geometry

- **Single Offset - 1st offset**
To allow displacement of the seat the shaft is offset from the centre line of the seat and body seal.
- **Double Offset - 2nd offset**
The centre line of the bore.
This creates a cam action during operation to lift the seat out of the seal resulting in friction during the first 10 degrees of opening and final 10 degrees of closing.
- **Triple Offset - 3rd offset**
The third offset is the geometry design of the sealing components not the shaft position.
The sealing components are each machined into an offset conical profile resulting in a right angled cone(see Fig 1-3rd).



High Performance Ball Valves
V800 series

The V800 Series metal seated Ball valve is flow conditioning technology and a unique ball arrangement, UNI-CON' new and improved double design products easily meet today' most challenging special control process applications.



Standard Specification

Trunnion Mounted 3-Piece & top entry style

Size	1" to 24" (DN25 ... DN600)
Rating	ANSI 150Lb to 2500Lb, JIS 10K to 63K, PN10 to PN450
Leakage	FCI 70-2, Standard : ANSI Class IV , Option : ANSI Class V
Cv Range	55 to 113,400
Press. Range	up to 6,170 psi(g) up to 434kgf/cm ²
Temp. Range	-150°F to +1,050°F -100°C to +565°C Option : -320°F to +1,562°F -196°C to +850°C
Materials	Carbon steel(WCB,WCC), Stainless steel(CF8,CF8M,CF3,CF3M) Chrome-moly(WC6,WC9,C12A), other alloys
End Connections	NPT(BSFF), RF/FF/RTJ Flanged, Socket weld, Butt weld
Actuators	Spring-diaphragm, Cylinder, Motorized, Electro-Hydraulic
Applications	Low Pressure Steam & Water, General Services, Flash Tank, Fuel Gas, Condensate Recirculation, Superheater and Reheat Spray, Desuperheater Water Spray, Gland Steam Pressure, Soot Blower, Steam Pressure, Auxiliary Steam



Unicon Trunnion - Mounted

- Trunnion-Mounted Ball**
 The ball is fixed and the seat rings are floating, free to move along the valve axis.
 Side load generated by the pressure acting on the ball is absorbed by bearings.
 At low pressure the seat sealing action is achieved by the thrust of the springs acting on the seat rings
 As the pressure increases the fluid pressure pushes the seat rings against the ball.
- Independent Ball And Stem**
 The ball and stem are independent to minimize the effect of the side thrust generated by the pressure acting on the ball.
- Anti - Static Design**
 The electrical conductance continuity between all the metallic components is guaranteed and certified.
- Low Emission Valves**
 Accurate machining of stem and bonnet sealing surfaces ensures compliance with the most severe pollution control regulations.
 Special "live" seals are available on request.
- Floating Self - Relieving Seat Rings**
 Two independent floating seat rings assure the bi-directional tightness of the valve.
 The seats are carefully designed to minimize the torque required to operate the valves without losing sealing power, which is assured from zero differential pressure to the valve's maximum rated pressure.
 Self-relieving seats are supplied as a standard feature. Double piston or combination seats (self-relieving/upstream, double piston/downstream) can be supplied on request.



Pneumatic Diaphragm Valve Actuators

A100/200 series

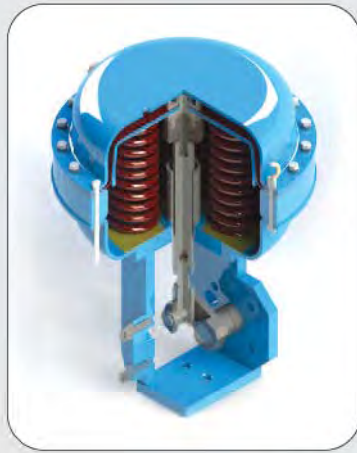
The A100/200 Series multispring diaphragm actuator is of the non reversible type. This has been designed with an improved mechanical structure which makes the product extremely competitive for price as well as suitable for application with critical operating conditions.



Standard Specification

Linear Motion Style(A100)

A100 Series	
Size	250, 290, 370, 370L 480, 480H, 550, 550L (mm Diameter)
Air Supply	2.8 ~ 3.6 kgf/cm ²
Effective Area(cm ²)	270 to 1,520
Travel Range(mm)	10 to 120
Temp. Range	-20°F to +180°F, -30°C to +80°C Option : -40°F to +248°F, -40°C to +120°C
Materials	Case : Carbon steel Stem : Stainless steel Diaphragm : EPDM + Nylon Spring : Oil Tempered Spring Steel Seal : EPDM / Silicone
Air Connections	NPT(BSPP), PT : 1/4", 1/2"
Option	Top Handle, Side Handle, Top Side Handle
Applications	Globe Valves



- Economical design.
- Simply top and top side mounted hand-wheels.
- Height strength actuators case with rugged design.
- Low volume between diaphragm and actuator case.
- High stability.
- Low hysteresis.
- Compact design with reduced height.

The stroking times for the multispring A100/200 Series diaphragm actuator depend on the application. The factors which influence this characteristic are the stroke, air supply pressure, size of pipework connection, spring rate, operation action (air to open, air to close) and type of the possible associated positioner. Actuator stroking time of less than one second can be obtained by using boosters.

Standard Specification

Rotary Quarter Turn Style(A200)

A200 Series	
Size	250, 290, 370 480, 550(mm Diameter)
Air Supply	2.8 ~ 3.6 kgf/cm ²
Effective Area(cm ²)	270 to 1520
Travel Range	60 to 90 Degree turn
Temp. Range	-20°F to +180°F, -30°C to +80°C Option : -40°F to +248°F, -40°C to +120°C
Materials	Case : Carbon steel Stem : Stainless steel Diaphragm : EPDM + Nylon Spring : Oil Tempered Spring Steel Seal : EPDM / Silicone Housing : Carbon Steel
Air Connections	NPT(BSPP), PT : 1/4", 1/2"
Option	Top Handle, Top Side Handle
Applications	Rotary Quarter Turn Valves, Ball Valve, Butterfly Valve

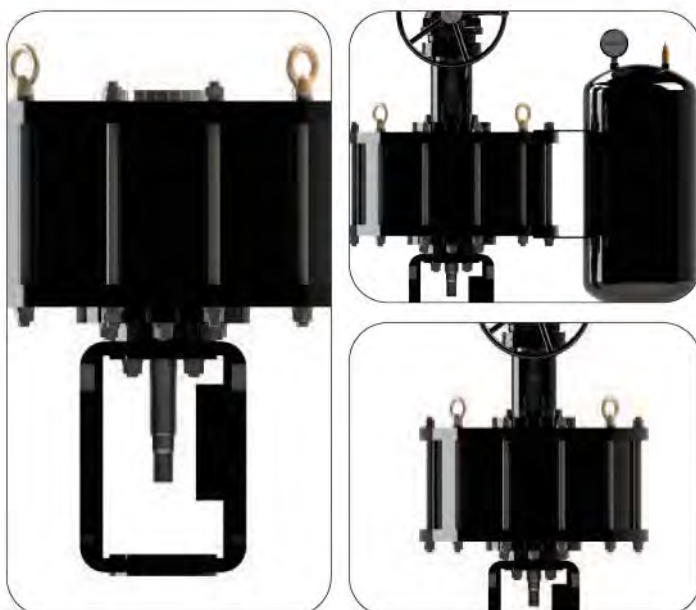


Pneumatic Cylinder Valve Actuators

A300 series

A300 is a complete line of linear pneumatic actuators purposely designed for the operation of control valves. The product range includes both double acting and spring return units available in several sizes which can deliver a force up to 30,000 daN.

These actuators can assure an extremely smooth valve operation and do not require any maintenance.



Standard Specification

Linear Motion Style(A300)

A300 Series	
Size	8", 12", 16", 20" (Inch Diameter)
Air Supply	5.0(7.0 Max.) kgf/cm ²
Effective Area(sq.in)	50 to 313
Travel Range(mm)	30 to 500 above
Temp. Range	-20°F to +180°F, -30°C to +80°C Option : -40°F to +248°F, -40°C to +120°C
Materials	Cylinder : Amalgan, Carbon Steel Stainless steel Stem : Stainless steel Piston : Carbon steel, Aluminum Spring : Oil Tempered Spring Steel Seal : EPDM / Silicone / Viton
Air Connections	NPT(BSPP), PT : 1/2", 3/4", 1"
Option	Top Handle, Side Handle, Top Side Handle
Applications	Globe Valves, Gate Valves, PRDS



- Economical design.
- Simply top and top side mounted hand-wheels.
- High strength actuators case with rugged design.
- High stability.
- Compact design with reduced height.
- High resolution.
- Dynamic response.
- Very fast stroking speed.
- Very low dead band, hysteresis, linearity.

General Purpose

These A300 actuators, double acting or spring return type, deliver small to medium thrusts and are designed to satisfy the most common applications.

Manufactured with a corrosion resistant cast aluminium body, they are suitable for service in harsh environments such as desert areas, power stations, petrochemical plants and steel industries.

Their light, compact and functional design assures an easy installation.

Thanks to the patented built-in lubrication system common to all the A300 range, they are virtually maintenance free.

General purpose A300 actuators are integrated by a complete line of pneumatic and electro-pneumatic positioners and accessories.

The shaft as well as the connection flange to the valve can be manufactured according to the various applications to meet all the customer's specific needs.

Product Gallery



General Service
Single Seated Type



Severe Service
High-Temperature



Severe Service
Cage Guided Type



Severe Service
Multi Stage Type



Severe Service
Angle Type



Service
Motor Actuated Type



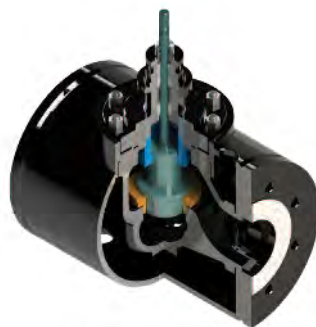
Desuperheater
Nozzle Spray Control



Desuperheater
Mechanical Nozzle



Dual Type
Control Valve



Full Jacket Globe
Single Seated Type



General Service
Special Ball Type



Pressure Reducing
Desuperheater



Cryogenic
Control Valve



Severe Service
Butterfly

Experience Gallery



GLOBE CONTROL VALVE

Project _ South Pars 17/18
 Customer _ MEPPCO FZE / POGC / NIOC
 A216 WCB 20" X 26" 300LBS JACKET VALVE



GLOBE CONTROL VALVE

Project _ South Pars 17/18
 Customer _ MEPPCO FZE / POGC / NIOC
 A216 WCB / 20" 900LBS



GLOBE CONTROL VALVE ANGLE DISK STACK TYPE

Project _ South Pars 12
 Customer _ DAELIM / NIOC
 A351 CF8C / 10" 900LBS



GLOBE CONTROL VALVE

Project _ South Pars 17/18
 Customer _ MEPPCO FZE / POGC / NIOC
 A216 WCB / 24" X 32" 300LBS



GLOBE CONTROL VALVE ANGLE STEAM VENT

Project _ NEIMENGGU-HUINENG , CHINA
 Customer _ DINGHE
 A217 WC9 16" 600LBS * 32" 150LBS

Experience Gallery



GLOBE CONTROL VALVE

Project _ SK PPS PJT
Customer _ SK CHECMICHANL
CW6M / 12" 300LBS, 260 Sets



Pressure Reducing Desuperheating Valve Shut Off Valve TCV

Project _ POLAND / Krakow Waste TPP PJT
Customer _ POSCO E&C
A216 WCB 6"X16" 600LBS



High Temperature PRDS

Project _ SHAANXI MEIHUA , CHINA
Customer _ DINGHE
A217 WC9 / 8"x14" 2500LBS



High Temperature PRDS

Project _ #South Pars Gas Field Development 13, 22, 23 & 24
Customer _ **** / IRAN
A216 WCB / 12"X24" 600LB

UNICON Model Number

MODEL NUMBER	VALVE CONFIGURATION
V100 SERIES	2WAY GLOBE(ANGLE) CONTROL VALVE- UNBALANCED PLUG TYPE - QUICK CHANGED TRIM
V101	P-PORT (PARABOLIC CONTOURED PLUG) --- GAS, STEAM & LIQUID
V102	"MULTI-STEP(CASCADE) --- "LIQUID FLOW ONLY" " "
V103	MICRO FLOW SPLIT PLUG --- GAS & LIQUID
V110	CAGE WINDOWS --- GAS, STEAM & LIQUID
V111	1-STAGE DRILLED HOLE CAGE --- GAS, STEAM & LIQUID
V121	2-STAGE DRILLED HOLE CAGE (LOW-NOISE) --- GAS, STEAM
V122	"2-STAGE DRILLED HOLE CAGE (ANTI CAVITATION) --- "LIQUID FLOW ONLY" " "
V131	3-STAGE DRILLED HOLE CAGE (LOW-NOISE) --- GAS, STEAM
V132	"3-STAGE DRILLED HOLE CAGE (ANTI CAVITATION) --- "LIQUID FLOW ONLY" " "
V180	DISC STACK --- GAS, STEAM & LIQUID
V184	HYBRID DISC STACK --- GAS, STEAM & LIQUID
V200 SERIES	2WAY GLOBE(ANGLE) CONTROL VALVE- BALANCED PLUG TYPE QUICK CHANGED TRIM
V201	P-PORT (PARABOLIC CONTOURED PLUG) --- GAS, STEAM & LIQUID
V202	"MULTI-STEP(CASCADE) --- "LIQUID FLOW ONLY" " "
V210	CAGE WINDOWS --- GAS, STEAM & LIQUID
V211	1-STAGE DRILLED HOLE CAGE --- GAS, STEAM & LIQUID
V221	2-STAGE DRILLED HOLE CAGE (LOW-NOISE) --- GAS, STEAM
V222	"2-STAGE DRILLED HOLE CAGE (ANTI CAVITATION) --- "LIQUID FLOW ONLY" " "
V231	3-STAGE DRILLED HOLE CAGE (LOW-NOISE) --- GAS, STEAM
V232	"3-STAGE DRILLED HOLE CAGE (ANTI CAVITATION) --- "LIQUID FLOW ONLY" " "
V280	DISC STACK --- GAS, STEAM & LIQUID
V284	HYBRID DISC STACK --- GAS, STEAM & LIQUID
V300 SERIES	3WAY GLOBE CONTROL VALVE- MIXING & DIVERTING TYPE QUICK CHANGE TRIM
V310	UNBALANCED TRIM- BOTTOM FLANGE TYPE --- GAS, STEAM & LIQUID
V320	BALANCED TRIM BOTTOM FLANGE TYPE --- GAS, STEAM & LIQUID
V330	UNBALANCED TRIM TOP FLANGE TYPE --- GAS, STEAM & LIQUID
V400 SERIES	PRESSURE REDUCING DESUPERHEATER SYSTEM (PRDS)
D400 SERIES	DESUPERHEATER
D410S	VARIABLE SPRAY NOZZLE DESUPERHEATER
D410V	VARIABLE SPRAY NOZZLE DESUPERHEATER WITH INTEGRATED TCV
D410M	MULTIPLE VARIABLE SPRAY NOZZLE DESUPERHEATER
D420	VENTURI NOZZLE DESUPERHEATER
D420V	VENTURI NOZZLE DESUPERHEATER WITH INTEGRATED TCV
V500 SERIES	SELF PRESSURE REGUALTING VALVE (SRV)
V510	PILOT OPERATED TANK BLANKETING VALVE
V515	PRESSURE REDUCING VALVE - OUTLET PRESSURE REGULATOR
V520	PRESSURE RELIEF VALVE (BACK PRESSURE VALVE)- INLET PRESSURE REGULATOR
V530	DIFFERENTIAL PRESSURE REGULATING VALVE
V600 SERIES	TRIPLE OFFSET BUTTERFLY VALVE
V610	WAFER TYPE
V620	LUGED TYPE
V630	DOUBLE FLANGED TYPE
V800 SERIES	TRUNNION TYPE BALL VALVE
A100 SERIES	LINEAR TYPE PNEUMATIC DIAPHRAGM ACTUATOR
A120	RA TYPE (VALVE FAIL CLOSE)
A140	DA TYPE(VALVE FAIL OPEN)
A200 SERIES	ROTARY TYPE PNEUMATIC DIAPHRAGM ACTUATOR
A300 SERIES	LINEAR TYPE PNEUMATIC CYLINDER ACTUATOR
A310	DOUBLE ACTING TYPE
A320	SPRING RETURN RA TYPE
A340	SPRING RETURN DA TYPE
A400 SERIES	ROTARY TYPE HEAVY-DUTY PNEUMATIC CYLINDER ACTUATOR
A410	DOUBLE ACTING TYPE
A420	SPRING RETURN RA TYPE



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Manufacturing Facilities

